Amendments to the Claims

This listing of the claims replaces all previous versions.

1. (currently amended) A breathing apparatus for providing a rebreathable air mixture expired by a user, which air mixture has a lower oxygen concentration than the ambient air, said apparatus comprising:

an expiratory path, said expiratory path communicating with a reservoir being formed by a membrane,

wherein said membrane is comprised of flexible thermo-conductive material that substantially equalizes the temperature of the expired air in said reservoir with communicating ambient air, thereby providing a means to decrease the dew point of the said expired air in order to reduce the humidity thereof and a means to decrease the temperature of said expired air,

wherein said reservoir is contained within a casing of selectively variable volume;

an inspiratory path communicating with said reservoir through a CO_2 absorption chamber wherein said absorption chamber is positioned downstream of the reservoir;

a directional valve in each of said expiratory path and said inspiratory path;

a demand valve in said inspiratory path to facilitate communication with the ambient air as required; and

means of communication of said expiratory path and said inspiratory path in sealed engagement with the respiratory system of a user.

2. (currently amended) The apparatus of claim 1 ~~25~~ wherein said reservoir additionally comprises:

means to vary the volume of the said reservoir from a minimum volume area to a maximum volume area.

3. (currently amended) The apparatus of claim 2 wherein said means to vary the volume of said reservoir comprises:

said ~~reservoir being formed by a flexible~~ membrane housed in a chamber said chamber formed inside ~~a reservoir case having a sidewall, an endwall and an aperture end opposite said sidewall~~ said casing, wherein said casing provides means to vary the volume of said chamber thereby limiting the extent of expansion of said ~~flexible~~ membrane which in turn determines the volume of ~~forming~~ said flexible reservoir.

4. (currently amended) The apparatus of claim 3 wherein said means to vary the volume of said chamber comprises:

said ~~reservoir case~~ casing being formed of a telescopic sidewall terminating at ~~said~~ an endwall on one end and ~~said~~ an aperture end, said sidewall extendable from a first position wherein said chamber is of minimum volume to an extended position wherein said chamber is of maximum volume.

5. (previously presented) The apparatus of claim 4 wherein said sidewall is extendable to at least one additional different position between said first position and said extended position; and wherein the means to hold said sidewall in said at least one additional different position allows user adjustment of the total volume of said chamber and concurrently the total volume of said flexible reservoir.

Claims 6-8 (canceled)

9. (currently amended) The apparatus of claim 1 ~~6~~ wherein said demand valve ~~means~~ for mixing inspired air with ambient air is adjustable thereby allowing ~~more or less~~ variable amounts of ambient air to communicate with said inspiratory path to adjust the oxygen levels of said inspired air.

Claims 10-11 (canceled)

12. (currently amended) The apparatus of claim ~~3~~ 4 additionally comprising apertures communicating through said sidewall between said CO_2 absorption chamber and ambient air adjacent to said sidewall~~; and wherein said reservoir membrane is comprised of flexible thermo-conductive material that effectively equalizes the temperature of the expired air in said reservoir with communicating ambient air, thereby providing a means to decrease the dew point of the said expired air in order to reduce the humidity thereof and a means to decrease the temperature of said expired air~~.

Claims 13-18 (canceled)

19. (previously presented) The apparatus of claim 1 wherein said reservoir is disposable and may be removed and replaced when a training session is finished.

Claim 20 (canceled)

21. (original) The apparatus of claim 1 wherein said inspiratory path is equipped with a port for communication of an oxygen analyser with air in said inspiratory path, said oxygen analyser capable of display of indicia showing the oxygen concentration in the inspired air mixture.

22. (currently amended) The apparatus of claim ~~3~~ 4 wherein said CO_2 absorption chamber is a canister,

said canister having a chemical means for a CO_2 absorption located therein; and means for attachment of said canister to said aperture end of

said casing ~~reservoir case~~ with said chemical means in communication with said reservoir, whereby said canister is replaceable.

23. (currently amended) The apparatus of claim 19 ~~1~~ wherein said reservoir has a volume that is kept constant during the training session.

Claims 24-25 (canceled)

26. (new) The apparatus of claim 1, wherein the membrane comprises means for preventing said moisture from communicating with said CO_2 absorption chamber.